

. What is claimed is:

1. A method for manufacturing a semiconductor device, comprising:

forming first spacers on sidewalls of first structures, wherein the first structures
5 include conductive pattern layers and insulation pattern layers stacked on a
semiconductor substrate, wherein a thickness of each of the insulation pattern layers
is at least four times thinner than a thickness of each of the conductive pattern layers;

forming a first insulation film to cover the first structures including the first
spacers and regions between the first structures;

10 forming first insulation film pattern layers located in the regions between the
first structures by planarizing the first insulation film until upper faces of the first
structures are exposed;

forming second structures on the first insulation film patterns and on the first
structures, wherein the second structures expose first portions of the first insulation
15 film patterns, wherein the first portions are spaced from the first structures by a
distance which is about 5 to about 35 percent of an interval distance between the first
structures; and

forming openings in the first insulation film which expose portions of the
semiconductor substrate by etching the first portions of the first insulation film
20 patterns using the second structures and the first spacers as an etching mask.

2. The method of claim 1, wherein formation of the second structures
comprises:

forming an etch stop film on the first insulation film patterns and on the first

structures;

forming etch stop film patterns which expose portions of the first insulation film patterns by etching the etch stop film;

uniformly forming a spacer film on the etch stop film patterns and on the
5 exposed portions of the first insulation film patterns; and

forming second spacers on sidewalls of the etch stop film patterns by anisotropically etching the spacer film so that the second structures including the etch stop film patterns and the second spacers are formed, wherein the second spacers are separated from the first structures by a distance which is about 5 to
10 about 35 percent of the intervals between the first structures.

3. The method of claim 1, wherein formation of the second structures comprises:

forming an etch stop film on the first insulation film patterns and on the first
15 structures;

forming hard mask patterns on the etch stop film which are located over the first insulation film patterns between the first structures;

exposing second regions having dimensions smaller than a critical dimension of the semiconductor device by forming second spacers on sidewalls of the hard
20 mask patterns;

forming the second structures which extend from the first structures by a distance of about 5 to about 35 percent of the intervals between the first structures by etching the etch stop film exposed through the second regions using the hard mask patterns and the second spacers as etching masks; and

removing the hard mask patterns and the second spacers.

4. The method of claim 1, wherein formation of the second structures comprises:

5 forming an etch stop film on the first insulation film patterns and on the first structures;

forming photoresist patterns on the etch stop film which are located over the first insulation film patterns;

forming the second structures which extend from the first structures by a
10 distance of about 5 to about 35 percent of the intervals between the first structures by etching the etch stop film using the photoresist patterns as etching masks; and
removing the photoresist patterns.

5. The method of claim 1, wherein forming the openings is performed
15 using an etching process in which each first insulation film pattern has an etching selectivity of more than about 10: 1 relative to each second structure and each first spacer.

6. The method of claim 1, wherein each second structure has a thickness
20 which is less than that of the first structures.

7. A method for manufacturing a semiconductor device comprising:
forming first spacers on sidewalls of first structures, wherein the first structures include conductive pattern layers and insulation pattern layers stacked on a

semiconductor substrate, wherein each conductive pattern has a first width and where a thickness of each of the insulation pattern layers is at least four times thinner than a thickness of each of the conductive pattern layers;

forming a first insulation film to cover the first structures including the first spacers and regions between the first structures;

forming first insulation film pattern layers located in the regions between the first structures by planarizing the first insulation film until upper faces of the first structures are exposed;

forming second structures on the first structures to expose first portions of the first insulation film patterns, wherein the second structures have second widths extended in a horizontal direction by a distance of about 5 to about 35 percent of intervals between the first structures; and

forming a second insulation film which fills regions between the second structures; and

forming openings which expose portions of the semiconductor substrate by partially etching portions of the second insulation film and successively etching the first portions of the first insulation film patterns using the second structures and the first spacers as etching masks.

8. The method of claim 7, wherein formation of the second structures comprises:

forming an etch stop film on the first insulation film patterns and on the first structures;

forming etch stop film patterns positioned on the first structures along a

progression direction of the first structures by etching the etch stop film;

uniformly forming a spacer film on the etch stop film patterns and on the first insulation film patterns; and

forming second spacers on sidewalls of the etch stop film patterns by anisotropically etching the spacer film so that the second structures including the etch stop film patterns and the second spacers are formed, wherein the second spacers are separated from the first structures by a distance of about 5 to about 35 percent of the intervals between the first structures.

9. The method of claim 7, forming an etch stop film on the first insulation film patterns and on the first structures;

forming an etch stop film on the first insulation film patterns and on the first structures;

forming hard mask patterns on the etch stop film along a progression direction of the first structures;

forming second spacers on sidewalls of the hard mask patterns;

forming etch stop film patterns having a second width extended in the horizontal direction by a distance of about 5 to about 35 percent of the intervals between the conductive patterns by etching the etch stop film using the hard mask patterns and the second spacers as etching masks; and

removing the hard mask patterns and the second spacers.

10. The method of claim 7, wherein formation of the second structures comprises:

forming an etch stop film on the first insulation film patterns and on the first structures;

forming photoresist patterns having second widths which are greater than the first width on the etch stop film along a progression direction of the first structures;

5 forming etch stop film patterns which extend in the horizontal direction by a distance of about 5 to about 35 percent of the intervals between the first structures by etching the etch stop film using the photoresist patterns as etching masks; and
removing the photoresist patterns.

10 11. The method of claim 7, wherein formation of the openings comprises:
forming photoresist patterns on the second insulation film to expose portions of the second insulation film between the second structures; and
etching the portions of the second insulation film and the first portions of the first insulation film patterns using an etching process in which each first insulation film
15 pattern and the second insulation film have etching selectivity of more than about 10:1 relative to each second structure and each first spacer.

20 12. The method of claim 11, wherein the photoresist patterns expose portions of the second structures and the first spacers.

13. The method of claim 7, wherein each second structure has a thickness which is less than that of the first structures.